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AN . ESSAY

ON

THE TEETH.



AN ESSAY
ON
THE TEETH.

BY
AUGUSTUS COOK.



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TO

THOMAS JOSEPH PETTIGREW, ESQ.

F.R.S., F.S.A.,

AND FELLOW OF THE ROYAL COLLEGE OF SURGEONS
OF ENGLAND.

MY DEAR SIR,

FEELINGS of the most sincere gratitude for the kind and disinterested benefits you have conferred on me, admiration for your eminent talents, and sentiments of the greatest esteem, have influenced me in dedicating this little Essay to you; while the kind and liberal manner in which you have

allowed me the sanction of your valuable name, renders me still more deeply indebted to you, and adds to the great respect and regard with which I subscribe myself,

Your most obliged

And obedient servant,

AUGUSTUS COOK.

12, *Maddox Street*,
Bond Street.

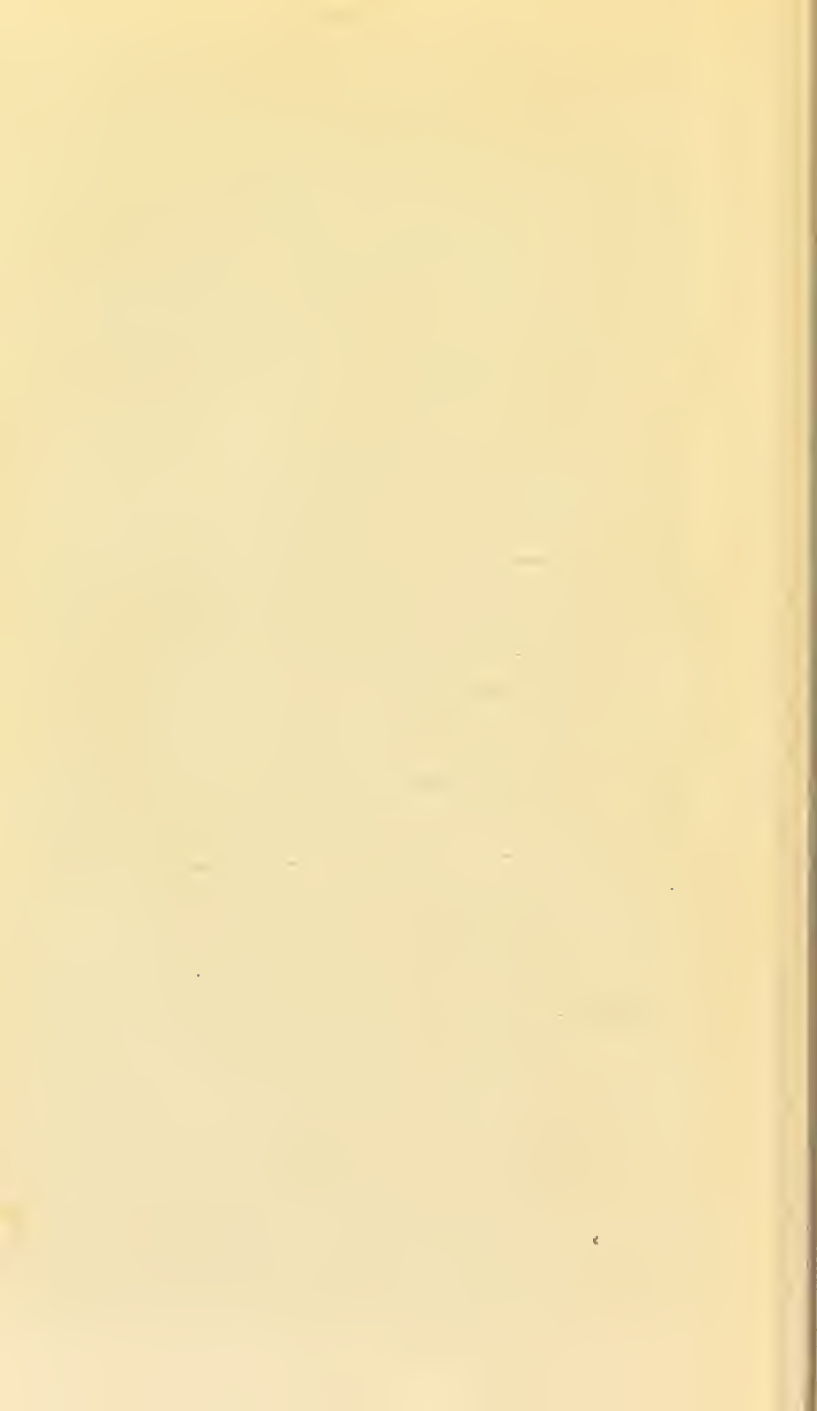
P R E F A C E.

IN offering this little Essay to his friends and the public, the Author is actuated by an earnest desire to solicit their attention to a few facts, which, although they are generally known, yet are thought upon by many with little or no reference to their important consequences. If the perusal of the following remarks should be the means of alleviating one or two cases of suffering, and of restoring health and comfort to any individual, the writer will conclude that he has not occupied a few hours in vain ; and he feels assured

that many persons may avoid a long continuance of annoyance, from bestowing attention upon the subject of the few pages which he has written in the hope of benefiting them.

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ON THE
DISADVANTAGES OF INATTENTION
TO THE TEETH.

IN the various periods of human existence, man is subject to good and evil, joy and sorrow, pleasure and pain. As he is endowed with faculties of thought, and organs of sensation, he is liable to the suffering and pain attendant upon the disorders and injuries to which the several portions of his frame are exposed; among the latter, none are more conducive to his comfort and enjoyment than the teeth, by means of which alone the food so bountifully provided for his use can be rendered beneficial, since without their assistance, the most nutritive aliments

or the choicest delicacies would alike be found of little avail for the support of his frame. The possession of these organs in a sound and healthy condition will therefore be readily admitted to be of the utmost importance.

Sensation is conveyed to the teeth, and to all parts of the head and face, by branches being distributed from the several divisions of the fifth pair of nerves, which are intimately connected with the general nervous system. This accounts for the sympathetic affections so frequently experienced in conjunction with diseases of the teeth. That this connexion does exist, is universally known, and too well understood, to render any explanation of it necessary. It is, however, subsidiary to my purpose in this short treatise, to endeavour to convince my readers of the important fact, that the general health of individuals is greatly dependent on the

healthy state of the teeth and their surrounding structures, the gums and alveolar processes, and that in many cases it may be either improved or injured, according to the attention bestowed on this portion of the human frame, which is too often entirely and most unaccountably neglected by almost all classes of society, and in many cases to the detriment not only of personal appearance, but also to the destruction of much comfort and pleasure.

Were it more universally understood how much mischief might be prevented by those persons who are subject to "gangrene" of the teeth, if they would consult in time a skilful dentist, I think few would be found who would not immediately avail themselves of his knowledge and assistance. The mouth should be examined periodically, (once in six months would be sufficient in general cases,) in order to detect any approaching

evil, and by bestowing this attention at a proper time, the teeth would be preserved for many years in health and beauty, and afford that use in mastication which is absolutely indispensable to sound and vigorous digestion. In the majority of cases, the teeth are suffered to advance in disease until it is too late to preserve them by the usual mode of stopping, and many persons lose the whole, or, at any rate, the greater number of them, before they can determine upon taking advice. They then discover, to their great regret, that they have too long delayed seeking relief, and that their only resource under such circumstances is to undergo the painful operation of having many "gangrened" teeth and dead stumps extracted.

It is almost incredible, that even this state of the mouth is frequently not sufficient to warn persons of the danger which they

incur. This painful and distressing condition, from its commencement, exposes the teeth successively to decay; and the patient may have to endure for weeks, perhaps months, the severe suffering and torture produced by the toothach. The crown of the tooth being thus destroyed, the nerve afterwards often becomes deadened, and sometimes quite destroyed; the stump is then permitted to remain unheeded in the alveolus until the patient is reminded of its presence by the inconvenience and pain caused by the formation of an "alveolar abscess," usually called a gumboil,* without occasioning any further trouble, but at other times causes the face to swell, accompanied with great pain and annoyance, and the patient is at last compelled to seek professional aid, and have the stump removed.

* The matter of which, after producing absorption of a portion of the bony part of the jaw, escapes.

This, indeed, is then his only cure, and he is informed, to his astonishment, that many of his teeth are decaying in a similar manner; some of them even being too far diseased to be stopped with safety. It is unnecessary to add more on this subject, after what has been written by an eminent member of the profession.

I may, however, be permitted to give an example of a case I had under my care some time since. Mrs. F., on the 20th of April, 1846, consulted me on the state of her mouth. She had scarcely any teeth left; in fact, none but the four lower incisores and one of the cuspidati remained uninjured, she having suffered the rest to decay successively. Her mouth and gums were in a most offensive condition; the gums and alveolar processes were absorbed to a very considerable extent.

I obtained her permission to extract the

greater number of the stumps, and she used a lotion suited to the case; I saw her in the course of a week, when she was greatly relieved, thus realizing my anticipations. She was so much pleased with the alteration of her gums, that she wished me to extract the remaining decayed teeth and stumps. I acceded to her wish, and her mouth soon became perfectly pure and healthy. When the sockets had closed, and the gums become sound and firm, she had a set of artificial teeth fitted, from which she derived the greatest benefit to her general health, because she was enabled to masticate her food in the manner nature requires. I would therefore advise all who are desirous of retaining these useful organs in a sound and healthy state, to examine them constantly, as they themselves might to a great extent be able to discover the first symptoms of disease; and should they

detect a tooth partially decayed, or even discoloured in the slightest degree, no time should be lost in having it properly treated. This judicious management would soon recompense them for the slight trouble that it might occasion them to experience. When the nature of the teeth is considered in many points of view, no reflecting person will delay giving them the attention they require.

Besides the personal appearance, which acquires great beauty, or exhibits real deformity, from the character of the teeth, the due importance and use of them in mastication should be remembered, as on the proper performance of this process, the perfect enjoyment of health very much depends; for if it be impeded or neglected, indigestion, the source of numerous maladies, will ultimately, if not speedily ensue.

Even the few individuals whose digestive

powers are most vigorous, almost under any circumstances will find that here their neglect or abuse will be attended with serious consequences. Those who wish rightly to appreciate the value of health will derive much benefit from the careful perusal of Dr. Combe's celebrated work on this subject.*

The loss of the front teeth, or even their partial decay, irregularity, or discoloration, produces at first sight an unpleasant effect, and this is one of those inevitable consequences of neglect, which might, with ordinary attention, be avoided. Another evil arising from bad teeth is the truly offensive state of the mouth and breath; these are blemishes that irresistibly strike the senses, while they are of the most repulsive character. Neither beauty, nor vivacity of feel-

* The Physiology of Digestion considered with relation to the Principles of Dietetics, by A. Combe, M.D.

ing can protect such persons from the pain which the observation of others must often excite.

I have known some persons whose teeth were in such a state, that it was impossible to continue a conversation with them. It is most desirable that all such would take the advice of a judicious friend, whose kindness, they might often perceive, could originate in nothing but a wish to suggest those means that would, with a little trouble on their own part, render the teeth beautiful in appearance, highly proper for mastication, and perfectly inoffensive.

ON THE
PROGRESS OF THE TEETH.

THE period at which the important change of the temporary teeth for a permanent set takes place, is about the age of six. Although most persons, and particularly, careful mothers, are in some degree acquainted with this fact, they do not sufficiently consider the consequences of inattention or neglect at this period. It is a time demanding care and vigilance; these are the only preservatives against the inconvenience and deformity which are likely to ensue.

Previous to the disturbance of any of the temporary teeth, and immediately behind them in normal development, the first per-

manent molares, or grinding teeth, may be observed making their appearance in the gums in the lower jaw. In a short time, the inferior central incisores of the first set become loose, their roots having been absorbed; at length they fall away, and give place to two new teeth of a larger and stronger growth. In the course of several months, the two corresponding upper teeth are replaced by the two permanent ones. After the lapse of about a year, the inferior lateral incisores may be seen obtruding through the gums, the temporary teeth having been shed; shortly afterwards, the superior lateral incisores take their places. During the next two years, the eight bicuspidæ are added, the lower preceding the upper, the anterior in each jaw again preceding the posterior, or second bicuspidæ. The cuspid or canine teeth are cut in the space of another year in a similar order, and these are followed in

about twelve months more by the four second molares, after which time there is no alteration for four or five years. At the expiration of this interval, the appearance of the dentes sapientiæ, or wise teeth, may be expected, thus completing the permanent set. The progress of these four teeth generally occupies two or three years.

The following table will show more clearly the periods when changes in the teeth usually take place, and it is considered to be one of the most accurate, but must be received with due allowance for the uncertainty which prevails in the growth and development of these organs in different subjects:—

First permanent molares, between 6 & 7 years.	
Central incisores	7 years.
Lateral incisores	8 —
First bicuspides	9 —
Second bicuspides	10 —
Cuspidati or canine teeth	11 to 12
Second molares	12 „ 13
Dentes sapientiæ, or wise teeth	17 „ 20

I have frequently observed considerable deviation from the above order in the development of the permanent teeth; for instance, the lateral, as well as the upper central incisors, have preceded the lower in their appearance, whereas, on the contrary, in a natural course, the lower teeth are cut previous to the upper. During these changes, the jaws become materially increased, particularly backwards from the first permanent molar tooth, and it is upon a due proportion of this enlargement with the newly developing organs, that the regularity or irregularity of the teeth mainly depends. When this transition takes place, an opportunity is afforded of regulating the teeth, which should always be embraced. But in availing ourselves of this opportune season, we should be careful not to abuse it. Every expedient to assist in giving room should be attempted before having recourse to extraction as the last resort.

If, however, there be any single tooth so situated as to leave no hope of its taking its natural position with the rest, it must be withdrawn, and the patient must submit to the lesser of two evils, I mean the disfigurement of a vacant space (which may possibly be considerably diminished) in the alveolus, instead of the irregularity which would have been caused by the over-crowded state of the mouth. I cannot, at the same time, help enforcing the necessity of a prompt discretion in adopting this last expedient. I dwell so much on this subject, because I find from experience that extraction is too often unnecessarily employed. I have seen many instances of persons, who but for the precipitate removal of the teeth, which on their first appearance were rather prominent, would have possessed a regular and even set. When these remarks are duly considered, parents will perceive the necessity of bestowing the greatest care on their

children at this critical period, when a frequent and minute inspection of the teeth may be of the greatest importance.

At schools little or no attention in general is paid to the condition of the teeth, and unless the vigilance of the parents be timely exerted to correct this negligence, permanent disease and derangement will inevitably be produced. It is a great object to detect in its early stage any existing deformity, because the difficulties of the dentist, like those of any other member of the healing art, increase in proportion as disease acquires strength and obstinacy from time. For instance, if a tooth at an advanced age be in an improper position, and has become firmly rooted, its adjustment will cause more difficulty, and require a greater length of time and more patience than its training and removal to its natural position could possibly have done, had it at an earlier

period been detected in an irregular situation, and the judicious application of mechanical assistance been made use of. For this purpose, the tooth should be attached to a bar constructed of gold, ~~and~~ fitted to the firm regular teeth, by means of silk ligatures, and drawn by degrees into its proper position; or the bite of the teeth may be so altered as to apply continual pressure on the irregular tooth in the opposite direction to which it is inclined to advance, by the application of a gold cap, or caps, fitted over the antagonist tooth or teeth, according to the number required to be removed to new situations. I have had the satisfaction of accomplishing a great improvement in one instance by merely tying together two teeth. These teeth, through being spread apart nearly an eighth of an inch, and their central sides being turned outwards, occupied much more space in the alveolus than was

naturally appropriated to them, and necessarily pushed the next teeth (the two lateral incisors) out of their places. In a few weeks, however, by the means I have mentioned, the defect was entirely removed, and at the present time, the teeth form a perfectly symmetrical line. When a proper method is early resorted to, it will seldom be found necessary to remove any of the permanent teeth.

There is a still more powerful reason why care should be exercised in extracting teeth at an early age. It too often happens that a crowded state of the teeth at a more advanced period of life has been caused by the very means which have been taken to prevent its occurrence, because a contraction of the jaws generally succeeds premature removal of the teeth, and thus reduces the space designed by nature for their reception. It should never be forgotten that, as

nature seldom fails to supply a sufficient number of teeth, it is generally easy to detect any spaces that may have been occasioned by injudicious extraction.

ON

SCALING THE TEETH.

PERSONS frequently entertain a strong prejudice against the removal of the tartar, or, as it has been properly termed, salivary calculus, which accumulates on certain teeth; they imagine that by its removal they would be loosened. I hope, however, to convince the reader of these few pages, that the contrary effect is the result, provided the tartar be not formed to too great an extent. If this deposit be left for any great length of time, the gums will suffer in the first place, and the patient may be aware of its presence by their general tenderness and readiness to bleed on the slightest applica-

tion of the brush or any hard substance with which they may come in contact ; they lose their natural pleasing colour, and become of a dark purple hue. This, however, commonly does not induce the individual to have the pernicious substance removed, and he continues to allow its accumulation until some teeth are nearly enveloped in it, not reflecting what annoyance and distress he must hereafter suffer. The gums and alveolar processes gradually become absorbed, and at length he discovers, to his great surprise, that many of his teeth are loose. He hastens in alarm to a dentist, who often endeavours in vain to convince him that the tartar alone has been the cause of so much mischief ; ~~and~~ after great difficulty, however, he may succeed in convincing the patient of his error, who must then be satisfied with the preservation of those (often few teeth) which, on displacing the concretion, can be

restored to a sound and healthy condition in their sockets; he is besides compelled either to suffer the inconvenience and unsightly appearance caused by the vacancy of such teeth, or he must have recourse to false ones, which were formerly considered an almost degrading remedy, but are now known and felt to be so necessary to the preservation of health, that no time should be lost in obtaining such an excellent substitute for those which have been sacrificed by neglect and inattention.*

* “When a long time elapses without eating, and also when digestion is impaired, the quantity of tartar which accumulates on the teeth is very great. Hence they are always most incrustated in the morning, and during fevers and other affections, when little or no food is taken. I have seen one instance in which a thick coat of tartar was removed by a dentist, in the belief of its being a diseased tooth—the tooth itself, on which it was formed, being left in the jaw perfectly sound. When the tartar is not duly removed, its presence injures the teeth, irritates the gums, and generally

The deposition of the salivary concretion alone will often render the breath offensive ; and when it is considered that the food must, to some extent, be contaminated by it, it is astonishing how, after being made acquainted with its injurious effects, any one can suffer a substance so essentially injurious to remain, especially as the operation of scaling the teeth is very simple, and the inconvenience ought scarcely to be denominated pain, when skilfully performed.

After the tartar has been once suffered to leads, sooner or later, to considerable suffering. The regular washing and brushing above mentioned ought, therefore, to be sedulously practised at every period of life, and taught as a duty to the young. When digestion is very vigorous, the health good, and the diet plain, and containing a full proportion of vegetable matter, the deposition of tartar seems to be diminished, and the teeth preserve their natural colour. Many rustics and savages thus possess teeth, the whiteness of which would be envied by many women of fashion."

Dr. Combe—The Physiology of Digestion, &c.

form, the application of the brush alone will not prevent its increase, although some constitutions are so vigorous that many years may have elapsed before it has accumulated to any great degree. The only method to arrest its progress is to have it entirely removed by suitable instruments, and this operation should be performed with care, in order to leave the teeth quite free, as it first forms under the edge of the gum. The teeth should then be made perfectly smooth, by means of some fine pumice powder, used with pieces of cane, which ought to be cut so as to reach the posterior surfaces of the lower incisores; these localities being the most inaccessible. This plan will enable the operator to detect, after rinsing the mouth, any remaining particle, as well as leave the teeth pleasant to the tongue; and they will be much less liable to be again attacked with tartar. Scaling

alone makes them rough and disagreeable. This is a very necessary point to be attended to, as, should the slightest portion remain, the deposition will again speedily take place, and soon accumulate to as great an extent as before.

This has frequently occurred. Acids are sometimes used in the operation, and although they render the teeth beautifully white, and facilitate the removal of the tartar, yet they induce in a short time their utter destruction, and therefore cannot be employed with the slightest safety.

It frequently happens that after the accumulation of tartar to any great extent, the necks, and a portion of the roots of the teeth become exposed; and when this is the case, great care should be taken as to what is introduced into the mouth, particularly acids; they produce an annoying ache by their contact with the exposed bone of all

teeth, and, at the same time, materially injure them. Changes even in the temperature of the atmosphere will often cause pain in the teeth where the bony part is exposed, but much danger, perhaps, need not be anticipated.

I would therefore strongly solicit all classes to bestow that attention on their teeth, which is so essential to their comfort, before it is too late to derive the full benefit of professional skill. Much also depends upon daily personal attention and cleanliness, as, after the removal of the deposit, it is necessary to well brush the teeth and gums, particularly the latter; they derive much benefit from the stimulus thus afforded. This should be done twice in the course of the day, once at night, and in the morning. The mouth should also be carefully rinsed after each meal, to dislodge particles of food left in the interstices between the teeth

and gums, which, if not removed, become decomposed, and consequently very offensive, causing great irritation to the gums, and through them, injuring the teeth and alveolar processes. Certain tinctures are also very useful in keeping the gums firm and healthy. Tincture of myrrh and spirits of wine form very excellent stimulants for the gums.

In most cases it is necessary, when brushing the teeth, to employ some good tooth-powder, for with those persons whose stomachs are weak, a kind of fur is generated upon the teeth, more or less according to the good or bad digestion of the individual; this, if not removed daily, forms into tartar. I have generally found a mixture of prepared chalk, myrrh-powder, and cuttle-fish to be one of the best; another formula, prepared with camphor, is, in many instances, preferred, because the camphor deprives the chalk of its unpleasant flavour, and in the

morning is extremely refreshing to the mouth: there are, however, many fancies with respect to this article. The chief thing to be guarded against is the admixture of any acids with powder for the teeth. Those, indeed, who have any regard for the preservation of their teeth, should be careful where they obtain tooth-powder, as many deleterious preparations are sold under this name.

ON
DISEASES OF THE TEETH.

THE principal source of dental disease appears to be inflammation, which is produced by many and various causes. Exposure to the cold* will in some instances occasion it: the nerve of the tooth being inclosed in a

* "In passing from a warm to a cold atmosphere, it is consequently useful to protect the teeth from the influence of the sudden change by breathing through a respirator, a woollen comforter, or two or three folds of a silk handkerchief. When the teeth and lower part of the face are left exposed during such transitions, rheumatism and toothach not unfrequently ensue, especially in delicate subjects, from the direct impression of the cold air upon parts rendered more susceptible by the preceding heat."—*Dr. Combe.*

dense, hard substance, is on this account unable generally to be entirely restored.

Mercury is another cause of disease in the teeth, especially where it has been administered freely for the alleviation and cure of fevers during infancy and childhood. It likewise causes absorption of the gums and alveolar processes in adults, and thus partially denudes the fangs of the teeth. Salivation is sometimes carried so far as to render them quite loose, and the bony structure of the teeth is then acted upon by the injurious effects of external agents. This medicine is, therefore, one that ought to be administered with extreme caution, and after great experience.

Smoking is another cause of destruction to the teeth; the fumes of tobacco by degrees discolour them, until they become quite black when its use is carried to excess. I have seen many instances of this effect. All the

front teeth in both jaws have been divested of their natural whiteness, as also the back teeth to a greater or less degree. Smoking may be indulged to a moderate extent, provided the mouth be well washed immediately after the practice, both to preserve the teeth, and to prevent the breath from becoming disagreeable, which is always the consequence of neglect in this respect.

“As the smoker,” says M. Deslandes,* “makes a chimney of his mouth, his teeth become black and fuliginous, his breath acquires a detestable odour. Hence cleanliness and the preservation of the teeth require that the mouth should be washed after smoking.”

When the teeth rise beyond their proper level, inflammation is generally present in the periosteum, which separately invests the fangs, and lines the sockets. They are

* Duglison.—Elements of Hygiène, page 385.

painful on being gently tapped with the nail, or on being touched by any hard substance. A tooth which is attacked by inflammation, may sometimes be saved by bleeding the gum freely with leeches when there is much pain in it, and no decay can be detected. I have been successful in many cases when I have been able to apply a leech on the first symptom of pain, but where the inflammation has been very severe, the tooth, early or late, will become diseased; and in consequence of the destruction of the nerve, it is deprived of its vitality, and becomes dark in appearance. It is generally supposed that decay of the teeth commences from the external portion. This, however, has been clearly demonstrated not to be the case; on the contrary, the bone is the seat of disease, then the enamel falls in, (by reason of the bone being no longer able to afford support to it,) and this generally

takes place during mastication; the atmospheric air then begins to act upon the bone, and this combined with the additional influence of the decomposed particles of food, which naturally fill the cavity thus formed, soon destroy the tooth, so far as to expose the nerve, and produce that well-known and most distressing malady, the toothach.

The tooth is then obliged to be extracted, or the health of the sufferer would be soon impaired by the absence of sleep, which excruciating pain must ever occasion. I have witnessed several cases in which the general health and nervous system were considerably deranged by the constant endurance of pain produced by decayed teeth.

In the commencement of the year 1846, I had a case of very considerable absorption of the gum and alveolar process, caused

solely by the decay of the second upper molaris of the left side. The crown was partially gone, and one of the fangs was entirely separated from the body of the tooth. The roots were all more or less diseased, and retained in their sockets merely by the gum and the respectively adjacent teeth. The face was extremely swollen, and subject to continual severe pain, which was increased by pressure, and accompanied by unpleasant throbbing, added to which, the patient suffered from general disturbance of the health. After much difficulty I succeeded in convincing her that the decayed tooth I have mentioned was the cause of all her pain, and she at length consented to have it removed. There was very little difficulty in extracting the tooth, as the roots were quite loose, in consequence of the enlargement of the socket by absorption of the alveolar process. On examining

the roots, I discovered that there was attached to one of them the sac of an abscess. The remaining two were in a state of inflammation; a great quantity of dark coloured blood, mingled with pus, which was very offensive, followed the removal of the tooth and separated fang; this afforded immediate relief from the pain in the face and gum. Several stumps in other parts of the mouth were also removed, which I had no doubt, from the appearance of the gums, would shortly have produced a recurrence of similar mischief had they been permitted to remain. Suffice it to say, that in the course of a few weeks, by the application of a proper lotion, and by the aid of medical treatment, the gums healed, and the mouth assumed a perfectly sound and healthy condition. The remaining teeth have caused no further trouble up to the present time.

Not long after this case, the sister of this

patient placed herself under my care; she was about twenty years of age, and her teeth presented a most distressing spectacle. Those in the upper jaw were all, excepting the dens sapientiæ on each side, and the left central incisor, more or less diseased; several teeth in the lower jaw were also in a state of decay. Decomposition in all these teeth appeared simultaneously, and the interiors of the crowns, which were quite soft and of a dark brown colour, presented one mass of decayed bone. Although the majority of the teeth were affected in this manner, decay in the usual form presented itself; some were attacked with it in a particular part. On its removal, the teeth readily admitted of their being filled with gold, or silver cement—they were thus preserved. As may be imagined, her teeth have been the source of the greatest suffering and distress, (“alveolar abscess,” swelled

face, and various disorders in the gums having been generated by the irritation of stumps and decayed teeth.) She is of a very delicate constitution, suffers from indigestion, and is naturally nervous and timid. She consented, however, after witnessing the satisfactory result of the treatment in her sister's case, to part with all her unsound teeth; the gums healed, and her spirits and general health afterwards were greatly improved.

When her mouth became sufficiently well, she had some false teeth inserted, formed of bone; by this means she was enabled properly to masticate her food. Her naturally pleasing appearance was soon completely restored, indeed, to such a degree, that many persons who had formerly seen her only when she was a great invalid, have scarcely recognised her since her restoration. It is proper to mention here that the father

of these young persons has been always subject to a decay of the teeth, of which he has lost the greater number, from a similar disease to that from which his daughters have suffered.

It is, I believe, a generally entertained opinion, that decay may be communicated from one tooth to another by contact. This, however, is an erroneous supposition. But as several teeth may become diseased from the same cause, though not precisely at the same time, the want of proper observation has led to the idea alluded to. The fact, however, cannot be so, as the enamel acts to each individual tooth as a complete preservative against contamination or irritation of external agents. Acids form the exception to this rule.

Some teeth are more liable to disease than others. I have generally observed that the *dentes sapientiæ* decay more frequently

than almost any of the rest; they are often in a state of disease immediately after their appearance in the gums. The bicuspidæ are also very subject to "gangrene," and may sometimes be seen decayed in pairs, as also the first molares. The lower incisores and cuspidati, or canine teeth, are the least subject to decay.

Disease may generally be arrested by proper and timely stopping. Some teeth are so liable to decomposition, that after the decayed portion has been removed and the cavity filled with gold, the disease arrested in one part will appear in another. I have seen teeth that have been stopped in four and five different places; they have thus been preserved for a considerable period. The teeth will be greatly preserved by keeping them properly clean, and the gums properly stimulated. Much may be done to prevent "gangrene" in the teeth; care should

be taken not to allow any very hot or cold liquids to come in contact with them; the water used to cleanse them should be slightly warm at all times; a too crowded state of the mouth ought to be relieved; this can sometimes be effected by the use of the file; or should this not be sufficient, a tooth, or perhaps one on each side of the jaw, may be removed with advantage.

The operator must, however, determine on the remedy according to circumstances, for by some, or one of these means, many teeth may be saved.

The general state of the health should likewise be attended to, and everything which will conduce to good digestion strictly observed, as indigestion is one of the great promoters of decay in the teeth.*

* "When indigestion is present, the mucous secretions of the mouth become altered in character, and by their incessant contact injure and even destroy the

teeth. From this cause we often see the teeth in young people in a state of complete decay. They are in reality the subjects of chemical decomposition, and are eaten away by the morbid secretions of the mouth, and hence in such cases we generally find the individual complaining of heat and soreness of the tongue, gums, and mouth, and occasionally the teeth being "set on edge."

When digestion is healthy and vigorous, toothach is rarely experienced, unless it be in consequence of a chill. But even then severe and continued pain is seldom felt, if the stomach have been previously healthy.—*Dr. Combe.*

ON

THE TOOTHACH.

THE tooth-ach is undoubtedly one of the most distressing maladies to which humanity is subject, and every means should be employed to prevent it. Pain is often produced in a tooth without the exposure of the nerve having taken place, and it is then, as I have remarked, caused by inflammation, which may prevail without inducing actual decay. The means adapted to allay the inflammation of the teeth are similar, to some extent, to those used to arrest the same disease in any other part of the body; the best and most expedient method is to apply leeches to the gums, and to foment the

mouth with warm (not too hot) water; aperients should be given, and low diet recommended for some days. When cold is taken in the teeth, slight pain will often be experienced in them.

It is by no means an unusual occurrence for the concomitant and aggravating suffering of the ear-ach, to be produced by the exposure of the nerves of the teeth; this most frequently arises from the decay of a lower *dens sapientiæ*.

These consequences necessarily ensue from the connexion existing between the nerves which supply the teeth, and those branches of the fifth pair of nerves which convey sensation to the other parts of the head and face. I have seen instances in which, on the removal of a decayed tooth, all symptoms of ear-ach have entirely vanished.

The tooth-ach is most frequently occa-

sioned by the exposure of the nerve. The air then reaches the membranc, and the paroxysms thus produced arc vry severe; under these circumstances, the decayed portion of bone should be removed, or as nearly so as possible, the cavity dried, and some liquid, best calculated to subdue inflammation and irritation, applied. All the nostrums sold, professing to cure the disease in question, not only fail, but considerably increase the mischief. The most generally useful application, perhaps, is the pure spirits of wine, or the same camphorated; but that which, on some occasions, I have found to afford the greatest relief, is a mixture of laudanum with the camphorated spirits. This has been successful when everything else has failed. Diluted acids have been recommended for the cure or alleviation of the tooth-ach, to be applied to the nerve, and are sometimes efficacious, but should be

used only by professional men, on account of their necessarily spreading over the enamel of the other teeth, and thus injuring them: they would, in the hands of an ignorant and unskilful practitioner, be highly dangerous. At the best, however, the ease afforded by any of these means is generally only temporary, and at length, the tooth affected is of necessity removed.

A bad state of the general health will not unfrequently produce pain and irritation of the teeth and gums, and especially any interruption of the due performance of the digestive functions; the inconvenience thus occasioned may be relieved, or, at any rate, alleviated, by having recourse to gentle aperient medicines, and a short abstinence from stimulating aliments and beverages.

ON THE
EXTRACTION OF TEETH.

THE extraction of a tooth, or teeth, is frequently indispensably necessary, to afford that relief which no other mode of treatment will procure.

When a tooth is very much decayed, and has been the seat of considerable pain, it is then generally beyond all hope of preservation, as the nerve would not bear the pressure necessary for properly stopping the tooth, either with gold or cement; neither ought it to be attempted at any time, when much uneasiness is experienced; its removal, therefore, in this stage of the disease, is essential to the relief of the patient, and

should not be delayed, because the decay extends, and the extraction of the tooth may then cause more pain, in consequence of the additional difficulty of applying the instrument, when the fangs only remain in the sockets. I am, at the same time, no advocate for extraction, while there is even the slightest hope of saving the teeth.

Indeed, as there are so many various causes which operate to produce pain, recourse should be had, as soon as it is felt, to professional advice, when, if it proceed from cold and inflammation, it will probably be relieved by such treatment as I have recommended; and the tooth will be thus preserved. Even those that are decayed, and the nerves of which are slightly exposed, may often be saved, if the patient will persevere sufficiently long in the proper treatment, and it is to be remembered that, should one of the molares be the subject of

decay, it is of as great importance, on account of its use in mastication, as the teeth which are in a more conspicuous part, and should be preserved as long as possible.

The treatment to which I allude, and which I am about to mention, is simple; but as it requires constant attention, and some patience, it is seldom continued for the necessary length of time to procure the desired effect.

The tooth should be (as in toothach) divested of all the bone which has been decomposed, then pure spirits of wine should be applied several times every day, on fine wool, which will, to a great extent, deprive the nerve of its sensibility, either by causing it to recede, or by partially deadening it, and in many cases, this after some time will enable the tooth to be stopped with cement. By this treatment, I was enabled to stop a tooth after the nerve had been exposed

nearly a year, which tooth, I am pleased to say, is at this time healthy, and quite as useful in mastication as the others. By this means I avoided removing a tooth which was necessary for the support of the adjacent ones, because when one tooth is lost, those adjoining generally fall in and approach one another at their crowns more than at their roots, producing an irregularity, which, for several reasons, is injurious at the time, and will afterwards be found extremely inconvenient. If, however, a tooth should have been long painful, and will not yield to the above treatment, there is no resource left but its removal.

Timid and nervous persons, however, who are frequently greatly alarmed at the idea of having a tooth extracted, and will not submit to the operation under any circumstances, (even under the influence of chloroform,) will derive the greatest possible advantage

from the simple application I have recommended; as it will preserve the otherwise exposed nerve from the effects of the cold air, and the internal bone from injurious contact with the food. It will also render the cavity produced by "gangrene" free from what is very offensive, attendant upon that disease. The spirit should be dropped upon a piece of fine wool sufficient to fill the hollow, and introduced into the cavity; this should be repeated several times during the day, until no pain is experienced, and in a week or two the tooth will most probably bear to be stopped; and, by its retention in the alveolar process, preserve the symmetrical line of the teeth, which would have been destroyed by its extraction.

ON

ARTIFICIAL TEETH.

AMONG the numerous improvements which have been recently effected in all branches of art and science, few are more remarkable, or have attained a higher degree of perfection, than those which have been accomplished in the construction and adaptation of artificial teeth. In the present day, they can be so made and suited to each individual mouth, as to render detection impossible, except under minute inspection, or by professional men. Many persons are apt to consider it a disgrace to make use of these artificial aids; but when it is remem-

bered what great advantages are to be gained, all sensible persons will abandon these futile and puerile ideas.

It is surprising that among such, many are to be found who have no dislike to wear a wig, although that article, by preventing the perspiration from duly escaping from the head, is greatly prejudicial to the scalp. Nor is the remark irrelevant, that some ladies, without reflection, produce by tight lacing a serious injury to their constitutions.*

Now the use of a wig, and tight dressing, only serve to gratify a foolish vanity; but the employment of artificial teeth will effect a real and substantial benefit, by enabling the patient properly to masticate his food, and, combined with medical treatment, will

* The Principles of Physiology applied to the Preservation of Health, and to the Improvement of Physical and Mental Education.—*Dr. Combe.*

relieve the sufferings of many a dyspeptic subject, and restore to vigour the organs of digestion, which may have been impaired by swallowing food in a condition unfit to enter the stomach.

Moreover, personal appearance greatly depends upon the nature of the teeth. This, it must be admitted, is of serious importance. The loss especially of the front teeth materially disfigures the face; but this defect can be entirely remedied, therefore it must be allowed that artificial teeth are of great importance to persons of every rank and capacity: to the orator, and to the man of science, they are of incalculable value.

All the disadvantages consequent upon the want of teeth are to be remedied by the skilful adaptation and insertion of artificial preparations, and there are scarcely any cases in which a perfect fit cannot now be accomplished, however complicated, even

where the mouth is rendered very irritable and painful by the retention of stumps and decayed teeth, which, as I have endeavoured to show in a former part of this treatise, ought, if possible, to be removed. Unhappily, some persons will not submit to the operation of having them extracted, but will rather endure all the inconveniences I have attempted to point out. Gold is generally employed for the attachment of artificial teeth, and when the mouth will bear its unyielding pressure, it is, I believe, the best basis; it is the purest and most durable, can be adapted to all forms, and may be fitted to the greatest perfection.

The operator, however, should spare no pains, when he intends using it, in thoroughly examining the mouth and the remaining teeth, in order to obtain an accurate model. The importance, indeed, of having a correct model of the mouth, can hardly be overrated;

for gold, it is to be observed, being a very hard unyielding substance, will, unless it is adjusted with the utmost precision to the teeth as well as to the gums, force the former out of their position. It is only by proper modelling that an equal and justly distributed pressure, and a complete fit, can be ensured.

There are cases in which gold, on account of its hard nature, cannot be employed—for example, when the mouth is diseased with stumps. Bone or ivory will then be found to answer better, as they are softer in substance, and after using either for a short time, they become generally more comfortable and easy in the mouth.

Bone can be better fitted over stumps than gold, because when they cause elevations it may be excavated to the required extent, on account of its greater thickness; gold will not admit of this so well, and often cannot

be cleared sufficiently to leave the stumps and tender parts of the gums untouched; striking on the metal model will not always effect this necessary object, and the gold will not admit of being much cut away, in consequence of the thinness of the plate, which ought scarcely to be reduced at all. Indeed, in these cases, bone is a very valuable substitute.

Then, again, where there has been much loss of gum and alveolar process by absorption, bone supplies the deficiency, and can be formed to the shape required; in some instances a much greater depth is necessary to be supplied, nearly the whole extent of gum and alveolar process being sometimes lost by disease. I have, under these circumstances, been obliged to use it, although gold would have been infinitely preferred by the patient. Bone also admits of artificial gums being carved out of it,

which are preferable to the long teeth, sometimes used to fill up the space caused by the way I have mentioned.

Teeth are now also employed with gums attached to them, composed of the same material, and which can be so naturally coloured as to be perfectly deceptive. By this plan all the crevices, by whatever means caused, are filled up, so that the particles of food cannot penetrate—an inconvenience which otherwise must occasionally occur where gold is used, and which becomes in a short time exceedingly offensive, with persons who do not take the trouble to clean their artificial teeth daily.

This is a precaution which should never be forgotten, as without it bone soon loses its colour; but it will not endure long in some instances, on account of the powerful action of the saliva and general heat of the mouth. Bone is also extremely useful in

the lower jaw, the surface of the gums being sharper and narrower than that of the upper. For this reason bone affords the patient more ease than gold, especially if there be any irritants to render the gums at all tender. It is not, however, well calculated to supply the loss of one tooth only, as it is necessarily more clumsy, and is likewise more difficult of attachment. I allude more particularly to its use in supplying the loss of front teeth. No rule, however, can be laid down as to the application of bone or gold; the choice must generally be left entirely to the judgment of the operator, and, except under peculiar circumstances, to the option of the patient. In any case, each of these materials requires its particular treatment, and the greatest pains should be taken in their application and fitting. It is to be regretted that, either through inattention, ignorance, or want of skill, some practi-

tioners often supply teeth which are not of the slightest use; and this not only excites a strong prejudice against artificial teeth, but prevents many who suffer pain and inconvenience from possessing a proper set by applying to the most skilful in the profession. I may here cite an instance of a lady, who, having lost all her natural teeth, excepting two of the front upper ones and six of the lower in the same situation, applied to me for an artificial set; she had also one stump remaining in the upper jaw. I could not prevail on her to have it removed, but as it gave no trouble, (being in a healthy state,) it might, I felt, be permitted with safety to remain. It was made level with the gums by the use of the file; she therefore required nearly an entire set of teeth. I accordingly took the impression of her mouth, and completed a set mounted on gold plates, her mouth being perfectly

healthy, and the gums being sound and firm; they were kept in their places by means of gold springs, and the only inconvenience ever experienced by her was the novel feeling of the appendage, she having been for many years with scarcely any teeth. To this she soon became accustomed, and she now of course feels as uncomfortable without them as she did at first in using them. The natural form of her face was restored; she has a beautiful set of teeth, which can be recognised as artificial scarcely by members of the profession. She is likewise enabled to masticate her food thoroughly, and with perfect ease and comfort; her health has manifestly and hourly improved from the time of their insertion, for she was, when I first saw her, suffering from continued pain in the chest, headach, and various other evils attendant upon indigestion *alone*.

It is surprising to find that persons even of high rank will submit to the most unsightly and inelegant adaptations of artificial teeth, which, so long as they fill up the vacant spaces, and do not cause much pain or inconvenience, seem to them to answer all requisite purposes; some even imagine that in having these ill-looking and badly fitting preparations exchanged for scientifically constructed and well-adjusted teeth, they would be subjecting themselves to needless trouble, expense, and even pain; most unfortunately for themselves, not being at all aware that the clumsy and ugly attempts which they have been persuaded to admit into their mouths are much worse in appearance than the vacancy caused by the loss of teeth.

A very general opinion also prevails, which is, that when one tooth only is lost in the anterior part of the mouth, it is not

important or necessary for the vacancy thus caused to be filled up by the insertion of an artificial tooth; with this opinion, however, I disagree, for through its introduction into the space, the other teeth would be more likely to retain their regular and proper position, and be prevented from falling in, which is of great consequence, as when that occurs the application of additional artificial teeth will be rendered more troublesome.

ON

IRREGULARITIES OF THE TEETH.

IF due attention were paid in early youth to the irregularities which so frequently present themselves during the development of the second set of teeth, and skilful treatment applied, much vexation and perhaps pain in after life would probably be prevented, while beauty and symmetry of countenance would be entirely preserved. In fact, there are few cases which, if dealt with in due time, will not admit of a restoration of the teeth to their natural arrangement in the jaws — teeth which, if allowed to remain until the latest possible moment when they might with safety and

benefit be extracted, would perhaps, in the meantime, have found sufficient space in the jaws to contain them, had they not been needlessly and most injudiciously sacrificed. Remedies are sometimes, however, attempted at too early an age to produce permanent benefit. There are no doubt cases where it is absolutely necessary that several of the permanent teeth should be removed, in order to give room for the newly developing and coming teeth; and when it appears that more space may be required, the bicuspidæ, as they are of less value than the first molares, and perhaps as subject to decay, may be advantageously removed. It would be very difficult to give any rules for the treatment to be pursued under such circumstances. The operator must be guided by his experience and judgment. He may gain much valuable information from the parents of the young patients, by questioning them

as to the regular or irregular formation and situation of their own teeth, as some conjecture may by this means be formed as to the probable development of the children's teeth; but this is not always to be depended upon. I have had an opportunity of observing in a whole family this phenomenon of constitutional coincidence in respect to the growth and formation of the teeth. In the instance alluded to, they were not only irregular, in consequence of not having sufficient space in the jaws, but there was a strong resemblance and correspondence in their irregularities both with regard to shape and situation; this relation exists in a more or less degree in every member of the family.

They have been a considerable time under my care; I am happy now to say the majority of those I have attended have had their teeth restored to a regular and proper

condition. The second front teeth are frequently to be observed making their appearance behind those of the first dentition, before those of the latter have been shed; and generally by the removal of the deciduous teeth a short time after the new ones have cut the gum, the latter fall into their places without giving any trouble; but at other times, years may be spent in attempting to reduce irregular teeth to their due situation, and which then, perhaps, cannot be effected without causing much pain and inconvenience to the patient; and on this account attention ought to be given at a period early enough to prevent the occurrence of great irregularities. I trust that these observations may be sufficient to give parents and all those who are intrusted with the care of children an idea of the attention necessary to be bestowed in early youth on the development of the permanent

teeth, and of the satisfaction they will experience, when by such care they have the pleasure of seeing their children growing up with a regular set of teeth, instead of the deformities so frequently to be met with.

THE END.







